

**Assessment Report
Academic Year 2003-2004**

Department: Mathematics

Program: MATHMS

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Mission of University

A Carnegie Doctoral/Research Extensive and SREB Category 1 institution, The University of Southern Mississippi's principal service area is South Mississippi. Southern Miss provides leadership for the entire state, region, and nation through:

- teacher preparation, economic development, polymer science, international programs, health services, and the arts;
- faculty innovation and research achievements;
- academic programs focused on wellness, societal needs, and quality of life;
- a strong, varied general education curriculum;
- undergraduate, masters and doctoral programs in the sciences, technology, education, psychology, criminal justice, economic development, the humanities, business, health, and the arts;
- cultural opportunities and holistic arts education; and
- students engaged in learning outside the classroom.

Southern Miss commits to sustaining these strengths while nurturing opportunities that create a vigorous region, engage students, and promote discourse, and enhance quality of life. The University of Southern Mississippi ascribes to the principles of constant quality improvement and pledges effectiveness and productivity in the achievement of its mission.

Mission of College

The role of the college is to implement the university's mission in science and technology through education, research, economic development, and service.

Mission of Department

The primary mission of the Department of Mathematics is the transmission, discovery, creation, and expansion of mathematical knowledge. Its curriculum is designed to encourage: learning based upon rational inquiry, problem solving, creativity, and intellectual initiative. Its instructional thrusts run the gamut from basic skill development designed to create a mathematically literate undergraduate populace, to meeting specific educational needs of students outside the science and technology establishment, to the creation and delivery of innovative and effective teacher-training programs, to the engendering of a strong mathematics knowledge base among those who will be charged with contributing to both the regional and national scientific enterprises. In addition, the members of our graduate faculty are also charged with the development of new and innovative curricula, with the expansion of the frontiers of mathematical knowledge, and with sharing their results with the community at large via publication and presentation. The undergraduate program serves students primarily from the southern region of the state. The students are predominantly the first members of their family to attend college. The graduate programs serve a constituency that is broadly-based. Students are drawn both regionally and internationally.

Purpose of MS in Mathematics and Relationship to University Mission and College Mission

The primary mission of the graduate mathematics program is to

- Develop mathematical thinking and communication skills
- Communicate the breadth and interconnections of the mathematical sciences
- Require study in depth
- Prepare students for teaching careers in the secondary school and community college setting, for employment outside academia, or for further graduate study
- Provide students with the necessary background in applied and computational mathematics for the department's computational sciences doctoral program

Student Learning Outcomes	Assessment Criteria & Evaluation Methods	Assessment Results	Use of Results
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<p>1. Develop mathematical thinking and communication skills.</p>	<p>1a. Students must have knowledge of advance calculus in order to begin the program. 1b. Students must include the Moore-style mathematics seminar in their program. 1c. Comprehensive exams.</p>	<p>Three students have successfully completed their comprehensive exams and graduated. These were good students. However, we lost two students because of poor performance. In addition, replacement TAs with the appropriate background are increasingly hard to find. The program does not attract enough viable students.</p>	<p>We are restructuring our master's program to emphasize applied, computational mathematics. The idea is to prepare students to enter the computational science doctoral program if they so desire.</p> <p>We developed measurable assessment methods to help us determine if our objectives are being met.</p>
<p>2. Communicate the breath and interconnections of mathematics.</p>	<p>2a. Each program must include at least three different areas. 2b. Comprehensive exams.</p>		<p>We developed measurable assessment methods to help us determine if our objectives are being met.</p>
<p>3. Require study in depth.</p>	<p>3a. A student must take at least two courses in each of three different areas. 3b. Comprehensive exams.</p>		<p>We developed measurable assessment methods to help us determine if our objectives are being met.</p>

<p>4. Prepare students for teaching careers in the secondary school and community college setting, for employment outside academia, or for further graduate study.</p>	<p>4a. Students must complete an exit interview just prior to their graduation. 4b. Graduates will be asked to respond to a survey three-years, seven-years, fifteen- years and twenty-one-years after their graduation. 4c. The annual number of mathematics graduates from the program should compare favorably with that of mathematics programs of similar institutions in the state.</p>	<p>Surveys were sent to 136 graduates of the B.S. and M.S. programs who graduated in 1983, 1991, 1997, and 2001. There were 21 responses. Questions centered upon their satisfaction with their mathematics preparation, advisement and intellectual enhancement. The survey also asked respondents to provide their job titles and salary range, and asked whether they felt adequately prepared for employment or graduate study. Evaluation of data indicated a high degree of satisfaction by the respondents.</p>	<p>Additional salary categories were added to the survey instrument because there were salaries above the \$105K level.</p>
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Reviewed by Dean

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Reviewed by Provost

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